

What is claimed is:

1. A driving apparatus for an electric vehicle including an electric generator driven by an engine and a motor for driving driving-wheels by using electric power from said electric generator, the driving apparatus comprising:

an engine-side input axle linked to a crankshaft of said engine and driven by said engine;

a motor-side input axle linked to a motor rotor of said motor and driven by said motor;

an output axle linked to said engine-side input axle and said motor-side input axle and transmitting power to said driving-wheels; and

a transmission provided in an engine-power transfer channel formed by said engine-side input axle and said output axle, and shifting a revolution speed of said engine-power transfer channel to a plurality of shift ranges.

2. The driving apparatus for an electric vehicle according to claim 1, wherein said transmission is a discontinuously variable transmission having at least two ranges of a high speed range and a low speed range.

3. The driving apparatus for an electric vehicle according to claim 1, wherein said transmission is a continuously variable transmission whose a gear ratio is continuously shiftable.

4. The driving apparatus for an electric vehicle according to claim 1, wherein said transmission is provided with a clutch shifting to a power transmission state of transmitting engine power to said driving-wheels and a power cutoff state of not transmitting.

5. The driving apparatus for an electric vehicle according to claim 1, wherein a clutch, shifting to a power transmission state of transmitting engine power to said driving-wheels and a power cutoff state of not transmitting, is provided on said engine-side input axle so as to be separated from said transmission.

6. The driving apparatus for an electric vehicle according to claim 1, wherein a clutch, shifting to a power transmission state of transmitting engine power to said driving-wheels and a power cutoff state of not transmitting, is provided on said output axle so as to be separated from said transmission.

7. The driving apparatus for an electric vehicle according to claim 1, wherein a clutch, shifting to a power transmission state of transmitting engine power to said driving-wheels and a power cutoff state of not transmitting, is provided between said output axle and a power transmission member linking said engine-side input axle and said output axle.

8. The driving apparatus for an power-electric vehicle according to claim 1, wherein a power-generating rotor of said electric generator is attached to said crankshaft, and said power-generating rotor is directly driven by said crankshaft.

9. The driving apparatus for an electric vehicle according to claim 1, wherein a power-generating rotor of said electric generator is arranged parallel to said crankshaft, and said power-generating rotor is indirectly driven through an electric-power-generating power transmission member by said crankshaft.

10. The driving apparatus for an electric vehicle according to claim 1, wherein said motor-side input axle is coaxially arranged on said engine-side input axle, and said engine-side

input axle and said output axle are linked through a power transmission member.

11. The driving apparatus for an electric vehicle according to claim 1, wherein said motor-side input axle is coaxially arranged on said output axle, and said engine-side input axle and said output axle are linked through a power transmission member.

12. The driving apparatus for an electric vehicle according to claim 1, wherein said engine-side input axle and said motor-side input axle are provided parallel to said output axle, and said engine-side input axle and said output axle are linked through a first power transmission member, and said motor-side input axle and said output axle are linked through a second power transmission member.

13. The driving apparatus for an electric vehicle according to claim 1, wherein said engine-side input axle, said motor-side input axle, and said output axle are disposed parallel to one another, and said engine-side input axle and said motor-side input axle are linked to said output axle through a power transmission member.

14. The driving apparatus for an electric vehicle according to claim 1, further comprising:

a velocity detecting means for detecting a traveling speed of the vehicle; and

a clutch controlling means for setting said engine-power transfer channel to a power transmission state when the traveling speed of the vehicle exceeds a predetermined traveling speed.

15. The driving apparatus for an electric vehicle according to claim 1, further comprising:

a load detecting means for detecting a traveling load of the vehicle; and

a clutch controlling means for setting said engine-power transfer channel to a power transmission state when the traveling load of the vehicle exceeds a predetermined load.

16. The driving apparatus for an electric vehicle according to claim 15, further comprising a shift controlling means for changing a gear ratio of said transmission based on the traveling load of the vehicle when said engine-power transfer channel is in a power transmission state.

17. The driving apparatus for an electric vehicle according to claim 14, further comprising a motor controlling means for controlling power of said motor based on said traveling speed or a traveling load.